

WHAT IS CLAIMED IS:

1 1. In a process for reducing aerosol in applying a
2 crosslinkable silicone coating composition onto a substrate wherein an
3 antimisting additive is added to the coating composition, the improvement
4 comprising adding to said crosslinkable silicone coating composition an
5 antimisting additive comprising at least one alkenyl-functional siloxane
6 copolymer prepared by

reacting, in a first step a compound (1) containing at least three aliphatic double bonds, of the formula



where R² is a trivalent or tetravalent hydrocarbon radical optionally containing one or more non-adjacent oxygen, silicon, or titanium heteroatoms,

13 R³ is a hydrogen atom or alkyl radical, and

14 x is 3 or 4

15 with an organosiloxane (2) having terminal Si-bonded hydrogen atoms,
16 in the presence of at least one catalyst (3) which promotes the addition of
17 Si-bonded hydrogen onto an aliphatic double bond,

the ratio of Si-bonded hydrogen in the organosiloxane (2) to aliphatic double bond in organic compound (1) being from 1.3 to 10, and

reacting, in a second step, SiH-containing hydrocarbon-siloxane copolymer(s) obtained in the first step with at least one α,ω -dialkenylsiloxane polymer (4),

in the presence of a catalyst (3) which promotes the addition of Si-bonded hydrogen onto an aliphatic double bond,

the ratio of aliphatic double bond in the α,ω -dialkenylsiloxane polymer (4) to SiH groups in the hydrocarbon-siloxane copolymer(s) being from

27 1.2 to 10,

28 and optionally, in a third step,
29 equilibrating alkenyl-functional siloxane copolymer(s) obtained from the
30 second step with one or more organopolysiloxane(s) (5) selected from the
31 group consisting of linear organopolysiloxanes containing terminal
32 triorganosiloxy groups, linear organopolysiloxanes containing terminal
33 hydroxyl groups, branched organopolysiloxanes optionally containing
34 hydroxyl groups, cyclic organopolysiloxanes, and copolymers comprising
35 diorganosiloxane and monoorganosiloxane units.

1 2. The process of claim 1 wherein R² is a C₁₋₂₅ alkyl radical
2 and R³ is a C₁₋₆ alkyl radical.

1 3. The process of claim 1, wherein said organosiloxane (2)
2 has the formula



4 where each R independently is an optionally halogenated hydrocarbon
5 radical having from 1 to 6 carbon atoms per radical and
6 n is 0 or an integer greater than 0.

1 4. The process of claim 1, wherein R² is a trivalent
2 hydrocarbon radical having from 1 to 25 carbon atoms per radical and x is 3.

1 5. The process of claim 2, wherein R² is a trivalent
2 hydrocarbon radical having from 1 to 25 carbon atoms per radical and x is 3.

1 6. The process of claim 3, wherein R² is a trivalent
2 hydrocarbon radical having from 1 to 25 carbon atoms per radical and x is 3.

1 7. The process of claim 1, organic compound (1) comprises
2 1,2,4-trivinylcyclohexane.

1 8. The process of claim 1, wherein said α,ω -
2 dialkenylsiloxane polymer (4) has the formula



4 where each R independently is an optionally halogenated hydrocarbon
5 radical having from 1 to 6 carbon atoms per radical and
6 n is 0 or an integer greater than 0.

7 R¹ is a C₂₋₁₀ alkylene radical, a divalent silane, or divalent siloxane
8 radical,

9 R⁴ is a terminally olefinically unsaturated C₂₋₁₀ hydrogen radical,
10 a is identical or different and is 0 or 1, and on average from 0.7 to 1.0,
11 m is 0 or an integer from 1 to 10, and
12 k is 0 or an integer from 1 to 1000.

1 9. The process of claim 1, wherein said α,ω -
2 dialkenylsiloxane polymer (4) comprises α,ω -divinylpolydimethylsiloxane(s).

1 10. The process of claim 1, wherein said crosslinkable silicone
2 coating composition comprises

- 3 (A) organosilicon compounds having radicals containing
4 aliphatic carbon-carbon multiple bonds other than said
5 antimisting additive,
- 6 (B) organosilicon compounds containing Si-bonded hydrogen
7 atoms,
- 8 (C) catalysts which promote the addition of Si-bonded
9 hydrogen onto an aliphatic multiple bond,
10 and optionally,
- 11 (D) inhibitors.

1 11. A crosslinkable silicone coating composition with reduced
2 aerosol formation, comprising

10 (X) an antimisting additive prepared by reacting, in a first step a compound (1)
11 containing at least three aliphatic double bonds, of the formula

12 R²(CR³=CH₂)_x (I)

where R² is a trivalent or tetravalent hydrocarbon radical optionally containing one or more non-adjacent oxygen, silicon, or titanium heteroatoms,

16 R³ is a hydrogen atom or alkyl radical, and

17 x is 3 or 4

with an organosiloxane (2) having terminal Si-bonded hydrogen atoms, in the presence of at least one catalyst (3) which promotes the addition of Si-bonded hydrogen onto an aliphatic double bond,

the ratio of Si-bonded hydrogen in the organosiloxane (2) to aliphatic double bond in organic compound (1) being from 1.3 to 10, and

reacting, in a second step, SiH-containing hydrocarbon-siloxane copolymer(s) obtained in the first step with at least one α,ω -dialkenylsiloxane polymer (4),

in the presence of a catalyst (3) which promotes the addition of Si-bonded hydrogen onto an aliphatic double bond,

the ratio of aliphatic double bond in the α,ω -dialkenylsiloxane polymer (4) to SiH groups in the hydrocarbon-siloxane copolymer(s) being from 1.2 to 10,

31 and optionally, in a third step,
32 equilibrating alkenyl-functional siloxane copolymer(s) obtained from the
33 second step with one or more organopolysiloxane(s) (5) selected from the
34 group consisting of linear organopolysiloxanes containing terminal
35 triorganosiloxy groups, linear organopolysiloxanes containing terminal
36 hydroxyl groups, branched organopolysiloxanes optionally containing
37 hydroxyl groups, cyclic organopolysiloxanes, and copolymers comprising
38 diorganosiloxane and monoorganosiloxane units.

1 12. A shaped body produced by crosslinking the composition
2 of claim 11.

1 13. The shaped body of claim 12, which is a coating.

1 14. The shaped body of claim 12, which is a coating which
2 repels tacky substances.

1 15. A process for producing a coating on a substrate
2 comprising applying the crosslinkable composition of claim 11 to a surface of a
3 substrate and crosslinking the composition.

1 16. A process for producing a coating which repels tacky
2 substances, comprising applying the crosslinkable composition of claim 11 to a
3 surface of a substrate to be made repellent to tacky substances, and crosslinking
4 the composition.